ANDREW C. ELLISON

Info

acannonellison@gmail.com
(858) 776-8681
San Diego, CA

Github: github.com/Ellisonac
Website:ellisonac.github.io/Personal-Portfolio

Skills

Python - django, numpy, pandas, scikit-learn, tensorflow, keras, spaCy

Web Front-End - JavaScript, HTML5 / CSS

Web Back-End - django, node.js, mySQL

Matlab - GUI development, automation, data analysis

Salesforce - Apex, Lightning Web Components

Java

Automation - data to modeling pipelines

Data analysis and visualization

CT and UT scan post-processing

Research and Presentations

Finite Element Modeling

Education

UC San Diego, La Jolla, CA

Doctor of Philosophy **March 2020**
Aerospace Structural Engineering

Master of Science **June 2017**
Structural Engineering - GPA 3.97

Bachelor of Science **June 2015**
Structural Engineering - GPA 3.96
Math Minor, Summa Cum Laude

Summary

Software developer with strong data analysis background looking to create data driven applications. During my five years of research experience I implemented data processing applications using Matlab and Python to convert complex 3D CT datasets into usable models and visualizations. Throughout my engineering career I have leaned heavily into data analysis and process automation and am excited to move into a software development career.

Experience

Portfolio

- Created a crypto currency FOMO calculator to display the potential earnings of missed past investments using JavaScript and web apis.
- Developed a 3D computed tomography data processing application using Matlab to extract and visualize damage in composite materials.

NAVAIR - Aerospace Engineer **Nov 2020 - Current**

- Development of improved analysis procedures through model automation and applied research.
- Development of GUIs to streamline report writing tasks and data analysis

UC San Diego - Graduate Student Researcher **Oct 2015 - Mar 2020**

- Implemented application from scratch using Matlab to convert 3D X-ray computed tomography scan datasets into actionable material damage information and visualizations.
- Developed automated segmentation techniques in Matlab for flat and curved panel CT scans to relate the damage state to the layered composite structures as delaminations and matrix cracking.
- Utilized Matlab and Python scripting to automatically implement damage states into computational models to predict damaged structural strength.
- Collaborated with other graduate researchers to collect and cross-correlate a broad suite of NDE data sets of impacted stiffened panels, including thermography, ultrasonic guided wave, and X-ray CT, to improve inspection capabilities for aircraft structures.
- Published several peer reviewed journal papers and a publicly available database of composite residual strength testing and NDE results.
- Utilized coding practices including modularization, comments, and reusable functionality.

NASA Langley Research Center — Research Intern **July - Sept 2017 and 2018**

- Created Matlab software to automatically register and quantify damage progression after a series of loadings to determine the relationship between damage area and max applied load.
- Lead, designed and conducted residual strength testing of impacted stringer stiffened panels.
- Created 3D visualization tools for CT datasets and implemented damage states into finite element modeling.